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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/690,262	10/17/2000	Eiji Nakamura	55303(904)	3668

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EXAMINER

ABDULSELAM, ABBAS I

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/690,262

Applicant(s)

NAKAMURA, EIJI

Examiner

Abbas I Abdulsalam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see # 12, filed 01/30/04, with respect to the rejection(s) of claim(s) 1-21 under U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Lill (USPN 5394442) and Farla et al. (USPN 5001692).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1-13, 16-17 and 20-21 rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (USPN 6445367) in view of Lill (USPN 5394442) and Yoshida (USPN 5889817).

Regarding claims 1, 9, 20 and 21, Suzuki teaches a control circuit (103) through which an image signal enters from the outside enabling the circuit to coordinate the operation of timing. Specifically, Suzuki teaches that the control circuit (103) generates control signals, Tscan and Tmry, applied to a latch circuit (105), which is used as a memory circuit for storing one line of the image data for a certain period of time only. Consequently, Suzuki teaches a shift register that is used for converting the image data, which enters serially in a time series to a parallel signal every line of the image. However, Suzuki does not teach "storage means for storing, as the digital data, a digital data which is a single signal of serial data including "a time series of data

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pulses representative of all rise and fall timings of the plurality of kinds of pulse signals and data pulses representative of all time intervals between the rise and falling timings.” In addition, Suzuki teaches as shown on Fig 14 an image display system coupled with the control circuit (103).

Lill on the other hand teaches a receiving section (26) (Fig. 2) which is coupled to fiber optic transmission medium of Fig. 1. Lill teaches that the receiver receives a signal (MES) having four pulses identified as (P1, P2, P3, P4) and are stored in “RTS control signal storage register”, and “data storage register” as shown on Fig. 2. See col. 4, lines 42-44, col. 3, lines 60-67, col. 4, lines 40-55, Fig. 1 and Fig. 3. Lill also teaches edge triggered storage registers (60, 64) storing outputs from digital times (58, 62) (Fig. 4, Fig. 5), with arrows identifying the falling edge and the rising edge of the outputs of the timers enabling additional bit positions by DCA1-DCAn. See col. 7, lines 13-19.

Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify Suzuki’s system of data processing to adapt Lill’s storages as illustrated on Fig.2 & 4. One would have been motivated in view of the suggestion in Lill the storing of a digital data as configured on Fig. 2 & 4 equivalently provides the desired storage means. The use of storing a digital data helps achieve an effective data transmission as taught by Lill.

Suzuki does not teach serial-parallel converter means for reading the signal of serial data from the storage means and producing as parallel data. Yoshida on the other hand teaches a 16-

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bit shift register (1012) which is provided between a Manchester decoding circuit (1010) and serial /parallel conversion circuit (1011). See col. See Fig. 1.

Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify Suzuki's image forming apparatus to include Yoshida's use of serial/parallel conversion circuit (1011). One would have been motivated in view of the suggestion in Yoshida that the serial/parallel circuit (1011) along with Manchester decoding circuit (1010) as configured in Fig. 1 equivalently provides the desired serial-to-parallel converter means. The use of serial/parallel conversion circuit helps function a communication system including displays as taught by Yoshida.

Regarding claims 2 and 6, Suzuki teaches the serial/parallel converted data, outputted to a latch circuit (105) used as a memory circuit. See col. 13, lines 57-62.

Regarding claim 3, Suzuki teaches a CPU (2106) outputting a control signal to the multiplexer (2103) in order to combine image signals displayed on the panel. See col. 51, lines 40-46.

Regarding claim 4, Suzuki teaches sequential switching with respect to switching elements with in a scanning circuit (4102). Col. 24, lines 61-63 and col. 29, lines 25-27.

Regarding claim 5, Suzuki teaches a shift register (204) as well as pulse-width-modulated signal waveforms. See Fig 19 and Fig 20.

Regarding claims 7, 11 Suzuki teaches elements with matrix wiring configurations. See Fig 4A.

Regarding claim 8, see Suzuki's Fig 45 including (timing A, timing B).

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Regarding claim 10, Suzuki teaches a display pattern in which the appropriate pixel be made to emit light. See Fig 5A.

Regarding claim 12, Suzuki teaches a pulse width modulating circuit (206) controlled by timing signal, Tmod, functioning in association with a control circuit (203).

Regarding claim 13, Suzuki teaches a voltage modulating circuit (106) with respect to image data.

Regarding claims 16-17, Yoshida teaches a shift register (1012) being provided between Manchester decoding circuit (1010) and serial parallel conversion circuit (1011). It would have been obvious that the Manchester encoder, by definition encodes data including that of time series in a series format to produce a single signal, and the produced signal in turn is converted into plural signals by S/P.

Claim 14-15 and 18-19 rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (USPN 6445367) in view of Lill (USPN 5394442) and Yoshida (USPN 5889817) and in further view of Farla et al.

Suzuki as modified has been discussed. However, Suzuki does not teach conversions with respect to overlapping pulse signals. Farla on the other hand teaches suitable relationships between the information signal and the write signal for recordings on recording materials such that the write signals comprise trains of pulses to form recording marks (10) comprising sequences of overlapping recording sub-marks (s). See Fig. 2 and col. 3, lines 22-27.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Suzuki's signal processing system to adapt Farla's write signals.

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One would have been motivated in view of the suggestion in Farla that the write signals, which include trains of pulses as configured on Figs. 2-3 meet the desired overlapping pulse signals.

The use of signals with trains of pulses helps function a control circuit for converting information signal as taught Farla et al.

Conclusion

2. The prior art made of record and not relied upon is considered to applicant's disclosure.

The following arts are cited for further reference.

U.S. Pat. No. 4,837,628 to Sasaki

3. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Abbas Abdulsalam** whose telephone number is **(703) 305-8591**. The examiner can normally be reached on Monday through Friday (9:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard Hjerpe**, can be reached at **(703) 305-4709**.

Any response to this action should be mailed to:

Commissioner of patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314

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Hand delivered responses should be brought to Crystal Park II, Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology center 2600 customer Service office whose telephone number is (703) 306-0377.

Abbas Abdulsalam

Examiner

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May 1, 2004



XIAO WU
PRIMARY EXAMINER